

# Advanced Placement Physics B Syllabus

**Instructor:** Jarrod Bradley

**Texts:** College Physics, Jerry Faughn and Raymond Serway, 1999, Fifth Edition  
TBA AP Physics B Study Guide

**Prerequisite:** 'A' in Advanced Math, 'A' in Honors Chemistry, 'A' in Quantitative Physics

**AP Physics B Exam Date:** Monday, May 14, 2007, Afternoon Session

**Exam Format:** 90 minute Multiple Choice & 90 minute Free-Response

**Materials:** Students should bring a scientific calculator, preferably a multiple line version, both texts, a class notebook, a quad color pen and a pencil to class everyday.

**Class Format:** Advanced Placement Physics B is intended to be a second year physics course that introduces students to five major disciplines of physics: mechanics, thermodynamics, waves, electro-magnetism and quantum mechanics. The class has been designed and will be taught with the goals of:

1. building a solid conceptual base through laboratory investigations, demonstrations and collaborative activities.
2. improving analytical skills through the constant application of concepts to a variety of challenges and problems.
3. familiarizing students with and preparing students for the Advanced Placement Physics B exam through frequent exposure to similar test conditions, including two full length exams.

**Grading:** The final course grade for each term will be comprised as follows:

Homework	10%
Labs	20%
Tests/Quizzes	45%
Final Exam	25%

**Homework:** Students are expected to complete homework assignments nightly. Solutions will be posted either on the web site or in class and students are responsible for reviewing this material. Many homework problems are similar to ones that have appeared on past AP exams. Late homework will receive no credit as solutions will already have been posted.

**Labs:** Laboratory investigations and activities are an important part of a physics education. To know physics is to do physics. There is an increasing emphasis of laboratory setups and error analysis on the AP exam. Students are expected to complete lab write-ups according to guidelines that will be explained. Students are expected to follow all safety guidelines outlined in the Lab Safety Rules handout. Late labs will be penalized one grade per day late up to five days, after which a zero will be recorded.

**Tests:** Exams will be given approximately every other week and will be mostly in AP format (half multiple choice, half free response). Students will complete 2 full-length AP exams before the end of the course.

**Extra Help:** Because of the accelerated nature of the course, it is imperative that students come in for help as soon as possible and not wait until the day of or before an exam. I am available before school and at lunch in my classroom. Appointments are helpful, but not necessary.

**Absences:** Due to the advanced nature of the course, regular attendance is important. Students should take initiative if absent including sending work in with a fellow student if due, obtaining homework assignments from the web site and completing work in advance of returning to class. Make up labs and tests are scheduled before school only.

**Tutorials:** There will be a number of tutorials during the spring semester for students to continue to apply their knowledge of physics after the course has ended. These tutorials will be scheduled a minimum of a month in advance and students will be contacted via email.

**Website:** For homework assignments, up-to-date grades and solutions visit **www.smhsphysics.net**.

**Email:** The best way to contact Mr. Bradley is via email at **shoshaggy@cox.net**. The San Marcos High School telephone number is 967-4581 and my extension is 275, however sometimes I am not alerted that I have a message. If you do not hear from me please email me as I did not get your message.

**Schedule:**

<b>Week</b>	<b>Topic</b>	<b>Chapter</b>
One	Vectors	2
	One-dimensional motion	3
Two	Two-dimensional motion	3
	<b>Exam</b>	
Three	Newton's Laws	4
	<b>Exam</b>	
Four	Work, Energy & Power	5
Five	Momentum & Collisions	6
	<b>Exam</b>	
Six	Circular Motion & Gravitation	7
	Torque	8
	<b>Exam</b>	
Seven	Fluid Mechanics	9
	Heat	10-11
Eight	Thermodynamics	12
	<b>Exam</b>	
Nine	Periodic Motion & Waves	13-14
	<b>Mid term Exam</b>	
Ten	Reflection & Refraction	22
	Mirrors & Lenses	23
Eleven	Interference & Diffraction	24
	<b>Exam</b>	
Twelve	Electrostatics	15
Thirteen	Electric Potential & Capacitors	16
Fourteen	Circuits	17-18
	<b>Exam</b>	
Fifteen	Magnetic Fields	19
	Electromagnetic Induction	20
	<b>Exam</b>	
Sixteen	Atomic Physics	27
Seventeen	Nuclear Physics	29
	<b>Exam</b>	
Eighteen	Review	All
	<b>Full Length Practice AP Exam</b>	
Nineteen	<b>Full Length Final Exam</b>	